

## ABSTRACT

Methods, systems, and media for use in separating mixtures. A slurry including a separation liquid and one or more particulate media materials is provided. A classification  
5 separation is performed on the slurry to produce a classified media having a controlled particle size distribution of the particulate media materials. The classified media is combined with a mixture to be separated to generate a separation mixture. A density separation is performed on the separation mixture. The particle size distribution can be controlled based in part on characteristics of components of a separation system to be used in subsequent density  
10 separations.

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